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Hemichionaspis, 10 (also Africa, etc).
Fiorinia, 25 (extended to Australia and New Zealand).
Pseudaonidia, 6 (also African).
Aonidia, 12 (one is Palæarctic).
Greeniella, 1.
Ischnaspis, 1 (origin uncertain).

It will be noticed that the faunæ of tropical Asia and Africa have elements in common, as might have been expected.

(10.) Genera of tropical Africa.

Lophococcus, 1.
Cissococcus, 1.
Halimococcus, 1 (also tropical Asia, undescribed species in Mr. Green's possession).
Tylococcus, 1 (Madagascar).
Lagosinia, 1.
Gascardia, 1 (Madagascar).
Cryptinglisia, 1.
Stictococcus, 1.
Selenaspidus, 1 (origin uncertain).

Some of these are very remarkable. The Coccid fauna of Africa is as yet very little known, and it doubtless contains many wonderful things.

(11.) Palæarctic genera.

Gueriniella, 1.
Pollinia, 2 (one is S. African.).
Newsteadia, 1.
Nidularia, 1.
Phœnicococcus, 1 (Algeria, an offshoot from the Ethiopian fauna).
Puto, 1.
Tetrura, 1.
Fonscolombia, 2.
Cryptococcus, 1.
Kuwanina, 1 (Japan).
Spermococcus, 1.
Luzulaspis, 1.
Filippia, 1.
Chelonicoccus, 1 (doubtful genus).
Parafairmairia, 1.
Aulacaspis, 6 (extends to tropical Asia, etc.).
Parlatoria, 17 (extends to tropical Asia, etc.).
Syngenaspis, 1.
Epidiaspis, 1.

It would seem that Europe has more peculiar types than North America.

T. D. A. COCKERELL.

Another Text-book of Entomology.[1]—"To induce the student to become acquainted, through personal observations in the field and laboratory, with some of the important biological problems as presented by insects," is stated to be the object of this book. It aims to present a course in study of insects, prepared from the biological point of view. Hence, the opening chapters deal with such general themes as metamorphosis, senses and sense organs, coloration, social life, habits and instincts, and the relations between flowers and insects. Discussion of these themes occupies 119 pages. Then follows a chapter of 43 pages on economic entomology pure and simple, and another of 39 pages on systematic entomology. In the latter the orders are briefly discussed, with scant reference to either their metamorphoses or other biologically interesting characteristics. Another brief and heterogeneous chapter of 20 pages discusses geographic distribution, the struggle for existence, parasitism, natural selection etc. As an academic discussion of the biology of insects this part is singularly lacking in unity and coherence.

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[1] Hunter, S. J. *Elementary Studies in Insect Life.* Topeka, Kan. Crane and Co., 1903. 12mo, xviii + 344 pp., 234 figs.

Part II is devoted to methods, equipment and laboratory exercises. There are outlines for practical study of but two of the biological themes discussed in part I: metamorphosis, and the habits of ants. For the balance, there is but another outline for the study of grasshopper anatomy, and another key to the orders and principal families of insects. There are many illustrations — far too many in fact in the laboratory outline, wherein each part is figured for the student; and while they appear to have been made from good originals, they are not well reproduced, and too often appear inky.

In so far as the study of the biological aspects of insect life is concerned the profession is better than the performance. There is considerable rambling discussion of biological themes (and this appears to be all that is offered as new in the method of the book) but, with the two exceptions noted above, there is no program set before the student for the study of them. The lapse into anatomy and the making of systematic determinations for the student's training is the more regrettable because there were many better laboratory outlines for grasshopper dissection, and a few better keys, already in existence. It may be, however, that the thin strata of insect biology, anatomy, collection making, systematic determination and economic procedure brought within the covers of a single book will afford light digging for short course students.

The chief criticism of it as a laboratory book is that it is pedagogically weakest in those matters on which it lays greatest stress. In this respect it is much like some other modern books of botany and zoölogy, which introduce ecological and biological phenomena, and get no farther than mere academic discussion of them. This endangers a relapse to text book methods, and neglect of the first hand study of the facts. Is it too much to expect of teachers who emphasize the value of these subjects that they should guide the students in the gathering, correlating and interpreting of biological data by definite and practical methods that will insure the least waste of time and energy? Shall we never get rid of the spectacle of a teacher and a score of students trying to peer at once into the same worm hole? Shall we be forever content with merely *demonstrating* biological phenomena?

J. G. N.

Two Papers on Insect Wings.[1] — A remarkable American silkworm moth (*Telea polyphemus*) with its right wings deviating from the normal in both color pattern and venation, furnishes to Dr. G. Enderlein a theme for the discussion of ontogenetic processes. The important part of the paper is that embodying the results of a search for ontogenetic processes in the light of which the aberration might be explained. These remarks from the introduction are interesting and set forth the author's point of view: "Experimental investigations serve only as a means of varying ontogenetic processes and also, therefore, of influencing, hindering or varying the combined sum of inner mechanical forces by means of the outer mechanical forces, in order to advance a little by means of the knowledge of their reaction to these forces. By such means no new forms will be brought to light; for no noteworthy, sudden result can be induced in phylogeny by the operation of external influences: phylogeny is but the slowly progressing result of summarization; so we would have to expect only phylogenetic forms which still exist somewhere in ontogeny. Retarded developments (*Hemmungsbildungen*), which we may designate as reversions, are of equivalent value, whether we think of the anlage in the egg or of a later outcome of ontogenetic processes. But it should not be understood that all reversions have existed as actual species, for there may be manifold combinations of phylogenetically younger and older component factors."

So the author sets about a very careful investigation of the structure of Saturnian and other Lepidopterous pupæ. Incidentally he makes some contributions to the knowledge of the nervous system

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[1] Enderlein, G. Eine einseitige Hemmungsbildung bei Telea polyphemus vom ontogenetischen Standpunkt: ein beitrag zur Kenntniss der Entwickelung der Schmetterlinge. *Zool. Jahrb.*, Abt. für Anat. u. Ontogenie der Thiere. Vol. 16, 1902, pp. 44; 3 pls.